CHAPTER IV

METHODOLOGY

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METHODOLOGY

This chapter deals with the methodology adopted by the researcher in the conduct of the present study. As already mentioned, the study involved the recording of the ongoing behaviour without attempting to influence the conditions of the occurrence of behaviour. Hence the method of research was a non-experimental one which needs elaboration since the study was focused on naturalistic observation of play patterns of preschool children.

A brief description of non-experimental research and its corollaries are given below for clarity and better comprehension of the method of research that the researcher adopted in his study.

4.1.0 Method Adopted for the Study

Nonexperimental Research

That is a type of research in which the researcher does not have complete control over the conditions of the study.

It is convenient to distinguish several varieties of non-experimental research. The first may be observational research, that is, research in which the researcher simply observes ongoing behaviour.

Mac Burney (2001) has stated that observational research involves recording ongoing behaviour without attempting to influence it. This method takes two general forms: naturalistic observation and participant observer research.

Naturalistic Observation

The researcher adopted naturalistic observation to study the free play of children in select cultural settings of Kerala.

Elmes et al. (2003) suggest that naturalistic observation is the most obvious and perhaps, the most venerable way of gathering data.

Schweigert (1998) points out that in naturalistic observation, the researcher unobtrusively observes behaviours in their natural setting and the investigator does nothing to interfere with the participant's behaviour. Often in fact the participants do not realize that they are being observed.

Mc Guigan (1990) reaffirms the views of Schweisert by adding that in naturalistic observation, the researcher records ongoing behaviour as it naturally occurs. No effort is made to produce or control it as is done in experimentation. The observations are preferably made in unobstructive ways so that natural patterns of behaviour are prescribed.

The study of children at free play would be an example of the use of this method.

4.2.0 Tools Employed

The following tools were used in the present study.

(iii) Hema Pandey's (1992) Cognitive Development Test for Pre Schoolers.(PCDTP)

(iv) One way mirror was used to separate the observer and the observed.

(v) Video camera was used for recoding the free play sessions

(vi) Running records by the researcher and the teachers concerned

(vii) Time sampling schedule

(viii) A checklist of behavioural categories was employed in the analysis of free play.

(i) Hema Pandey's (1992) Cognitive Development Test for Preschoolers (PCDTP)

This test was used to measure the cognitive development of preschoolers in Kerala. The test was administered on a total of 40 children of which 20 were girls and the remaining 20 boys.

Description of the Tool

Hema Pandey's Cognitive Development Test for Pre-schoolers is a standardized test which measures the cognitive abilities of preschoolers (3 - 5 yrs).

PCDTP has been standardized on 270 (3+, 4+, and 5+ year old) children. The test has high validity. Its correlation with the Binet Scale – Form L and Form M -1960 revision was 0.80. The test re-test reliability was 0.95.

PCDTP measures the cognition in children by verbal and non-verbal items. The six sub-tests which make up PCDTP were chosen after wide study of the available text and tests.

The six subjects are:

Conceptual skills

Information

Comprehension

Visual perception

Memory

Object vocabulary

Administration of the Tool

For the effective administration of the tools, a well planned time schedule was prepared by the investigator in consultation with his supervising teacher. Accordingly, the Heads of the four pre-schools

were contacted in person and the administration schedule of the test and nature of the test were briefly described to them and the days of administration of the test were fixed according to their convenience.

Hema Pandey's Cognitive Development Test for Pre-schoolers was used for measuring the cognitive development of the preschool children. The test was administered with the help of parents and teachers. The test was administered orally in a room to ensure privacy of the administration of the test. There was no time limit. The child was given sufficient time to complete all the test items. A good rapport with children was established prior to the testing. Before administering the testing, the child was seated comfortablly. All the testing materials were arranged systematically in order to avoid destruction and to make the presentation easier during the process of testing. Test scored were recorded simultaneously on the score cards.

Scoring

Each correct response was given one score. The total score constitutes the "raw" scores attained by the child in the test. The standard scores of the child as per his age were found out on the age norm table. Each child was subjected to test the same day as and when the video recording of the free play session was carried out. On the basis of the standard scores, all the 40 preschoolers were grouped into high, average and low categories.

(ii) One way Mirror

One way mirror was used to separate the observer and the observed. The mirror was used to ensure continuous recording of free play of preschool children to avoid interruptions of all kind. The mirror was used mainly in the preschools and occasionally at home during the free play recording.

(iii) Video Camera

A video camera was used for recording the ongoing free play behaviour of children with the help of a skilled technician. Altogether, the researcher recorded 160 free play episodes of the 40 children. Each episode lasted for 10 minutes duration.

Mac Burney (2001) enumerated that naturalistic observation has few hard and fast rules of which the following three rules are worth mentioning. They are careful record keeping, the use of variety of types of measures and care for privacy of the participants. Careful record keeping is what separates naturalistic observation from casual impression information. The observer should keep a record of all behaviours of interest and the times at which they occur. A check sheet was used when all or most of the categories of behaviour under observation are known in advance. This recording of information is facilitated by using movie cameras, videotape or audiotape records or other devices.

(iv) Running Records

The researcher and the teacher wrote running records of free play of preschool children.

The running record is a detailed objective, sequential recording written while the event is happening. Researchers in child development depend on running records at times called specimen description to gain insight into the development.

A running record sheet in the prescribed form was prepared by the researcher. Prior to the recording, the concerned teacher was given a running records sheet. The teacher was adequately guided on the details of the process of the running records such as how to observe, record, conclude and comment.

To make the process of running the record more authentic, the researcher made an extensive pilot study in the government Anganwadi at Pandikkadavu in Mananthavadi of Wynad district. A format of the running record is given as Appendix I.

The researcher and the teacher recorded only the facts, wrote exactly what was happening in the present tense, recorded all the events in a sequence as they are occurring and used abbreviations or short phrases if helpful. After the completion of the observation the researcher and the teacher went back and filled in the needed details.

At the end of the running record, both the teacher and researcher wrote a brief conclusion.

The researcher prepared 10 minutes of running records of 40 children in the Nursery Indoor and Nursery Outdoor, free play sessions.

The running records of the free play at home, both indoor and outdoor, for 10 minutes of 40 children were done by the researcher alone.

(v) Time sampling schedule

The researcher used time sampling schedule to find out the play preference of preschool children in the indoor and outdoor free play sessions at home and preschool.

Time sampling is a technique in which regular observations are made on a specific schedule. Observations may be made over on a specific schedule. Observations can also be made over a fairly long period of time to ensure that a child's full range of behaviour is seen, or observations of individual may be made for specific length of time within one observation period.

Nicholson and Shipstead (1994) ascertained that sampling can yield quantitative data about the group as a whole (e.g., the incidence of types of play in a preschool classroom) and about individuals (e.g., the predominance of individual's play types).

Woods and Taylor (1998) suggested that possible topic might include observing a child during playtime. Nicholson and Shipstead (op. cit) denoted that the selection of an appropriate topic to study is the first step in using time sampling. The topic should focus on overt behaviors that occur rapidly. For example, the types of children's play are overt behaviors because the observer can easily see if children are playing alone or with others.

For working with well defined categories, the researcher is ready to enter in the record form. Sufficient space is provided at the top for the schedule. Then categories (e.g., types of play with culturally diversed materials: exploration, representation, dramatic play) are listed horizontally near the top of the grid or vertically down the left side of the page, where, there is more room (Nicholson and Shipstead, ibid.).

The researcher selected five types of play to study the free play preference. They are physical play, material play, fantasy play, look & watch play and walk and run.

Nicholson and Shipstead say, "On paper, the most difficult task in constructing a time sampling instrument is specifying the time sampling units".

With the advent of film and video recording in child study, the method of continuous recording has attained considerable popularity

and better clarity for analysis of behaviour. The method involves recording the presence or absence of behaviour during arbitrarily selected time intervals. The difference between this method and one zero sampling is that behaviours are coded from permanent record, e.g. video, no time out is needed to record behaviour in continuous recording. Yarrow and Anderson note that with continuous recording, information is available on the (i) frequency (ii) concurrence and (iii) sequencing of behaviour.

The researcher selected three minutes of continuous free play of each child from the ten minutes of continuous free play, both indoor and outdoor at home and preschool, which was recorded earlier using a video camera.

If the interval of the time sampling is reduced to a minimum of 10 seconds, it would yield a better comprehensive picture of the behaviour pattern of the child and hence in the present study, a 10 second time sampling interval is followed to analyse the play preferences which are already recorded in the videotape.

Nicholson and Shipstead say that if the observer is interested in the frequency of behaviours, it is worthwhile to record tallies. Hence, tallies was used for recording the presence of each type of free play in the time sampling.

The study was conducted on 40 preschool children (20 boys and 20 girls) from 4 different cultural settings. They were tribal, coastal, rural and urban. The researcher recorded a total of 1600 minutes of free play session at home and preschool. Out of the 1600 minutes of free play, 480 minutes were taken to find out the free play preferences.

To determine whether an observation technique is reliable or not, a researcher can calculate the inter-observer reliability. In order to avoid observer bias Schewigert (1998) suggested to make observation on audiotape or videotape. The use of video recording facilitates the rechecking of the tallies and it ensures observer reliability.

Out of the each 10 minutes, 3 minutes of free play are belonging to different sessions as Nursery Indoor, Nursery Outdoor, Home Indoor and Home Outdoor were taken. These 3 minutes of continuous free play were divided into the time intervals of 10 seconds. It was then played in a VCR to tally the play preferences. The total frequencies of free play preferences were converted into percentages.

A checklist of behavioural categories was expounded by Hutt et.al. (1990) in which each type of play was drawn up for the use with a time sampling method of observation.

While adapting the behavioural categories expounded by Hutt et al. with modifications to suit play patterns in Indian/Kerala culture, the researcher took all earnest efforts not to tilt the general face/construct validity of the tool. To ensure the face/construct validity, the adapted form was submitted for detailed examination by the experts in the filed of Education and Psychology and specialists in the child's preschool activity. Their suggestions were also included and they all agreed that the adapted form is found to be congenial to Indian/Kerala cultural settings. The behavioural categories employed in the present Time Sampling study of the free play of pre-school children are given as Appendix II

Preparation of Time Sampling Form

Time sampling form was prepared for each child to tally the free play preference. A model of the time sampling form is given as Appendix III

The format contains the following dimensions.

Name of the preschool, name of the child, age, date of recording, gender, observer name, aim of the study, content, observation technique. The time started and the time completed are furnished at the top of the form. Time interval is marked vertically and types of play are marked horizontally in the table. Corresponding total frequency is given at the bottom of the table.

The researcher selected 3 minutes of continuous free play from the 10 minutes of free play in one area (e.g. Home Indoor) recorded by video camera. Thus a preschool child's 12 minutes of free play out of 40 minutes were used to find out his free play preferences.

4.3.0 Procedure for the Collection of Data

The researcher adopted naturalistic observation to study the free play of children in select cultural settings of Kerala. A video camera was used for the recordings of the ongoing free play behaviours of children with the help of a skilled technician. Altogether the researcher recorded 160 play episodes covering all the 40 children. Each episode lasted for 10 minutes duration.

One way mirror was used to separate the observer and the observed. The mirror was used to ensure the continuous recording of free play of the preschool children to avoid interruptions of any kind.

The researcher and the teacher wrote running records of free play of preschool children in the nursery indoor and nursery outdoor play. The running records of the free play at home, both indoor and outdoor was done by the researcher alone. Hema Pandey's cognitive development test for preschoolers was used to measure the cognitive development of preschoolers in Kerala. The test was conducted on a sample of 40 children out of which 20 were girls and the remaining 20 boys. The researcher used time sampling method to find out the

play preferences of preschool children in the indoor and outdoor free play situations at home and in pre-schools.

4.4.0 Selection of Sample

Ten children were selected from each pre-school consisting of five boys and five girls of which 3 were government *anganwadies* and fourth one a reputed management English medium pre-school spread over coastal, tribal, rural and urban areas in four revenue districts.

Table 4.1

Break up of the sample selected for the study

Sl. No.	Name of school	Locale	Type of Management	Medium of instruction
1.	Anganwadi Edasserimala Aranmula P.O. Pathanamthitta	Rural	Government	Malayalam
2.	St. Teresas Pre-Primary School Ernakulam	Urban	Private	English
3.	Anganwadi Chekadi Thirunelli P.O., Wynad	Tribal	Government	Malayalam
4.	Anganwadi Vallayazhikkal P.O. Alappuzha	Coastal	Government	Malayalam

The urban preschool (St. Teresas Pre-primary school, Ernakulam) is situated in the heart of Ernakulam town and it is a typical urban preschool with rich infrastructural facilities. Most of

the preschool children of this school are hailing from high socio-economic strata.

The rural preschool (*Anganwadi, Aranmula*) is amidst paddy fields and is situated in a typical village of rural culture.

The tribal preschool (*Anganwadi-Chekadi, Thirunelli, Wynad*) is situated the border of a wild forest. The place *Chekadi* is in the Kerala-Karnataka border. Various tribal groups live here. The preschool children selected from this school are all tribals.

The coastal pre-school selected for the study (*Anganwadi, Valliazhikkal, Alappuzha*) is situated hardly 50 meters near to the Arabian sea.

4.5.0 Statistical Techniques Adopted for the Study

Arithmetic Mean

To calculate the Arithmetic mean of the 40 preschoolers standard score of the cognitive development test the following formula was used.

$$M = \frac{\sum x}{N}$$

M is a symbol for the mean.

Σ, The capital Greek letter "Sigma" is the symbol for "sum off".

x, refers to scores in the distribution of the variable x.

N, stands for number and used in statistics to refer to the number of scores in a distribution.

Standard Deviation

To calculate the standard deviation of the 40 pre-schoolers standard score the following formula was used.

$$SD = \sqrt{\frac{\sum (x-m)^2}{N}}$$

SD is the abbreviation for standard deviation, emphasising that the variance is the standard deviation squared x refers to the each score in the distribution. M refers to mean of the distribution thus X-M is the score minus the mean or the deviation score.

(Aron and Aron, 1994)

To classify the group into high, average and low achievers in the cognitive development test, the following formula was used.

$M + \frac{1}{2}\sigma$, $M - \frac{1}{2}\sigma$, between M+ and M- ½ σ

Where M is the symbol for the mean and σ is the symbol for the standard deviation.

Frequency of the observations of different types of play converted into its percentages was made use of in this study.